MULTITECH®

LoRa Alliance®




# MultiTech Conduit®

## LTE Category 4 Programmable Gateway

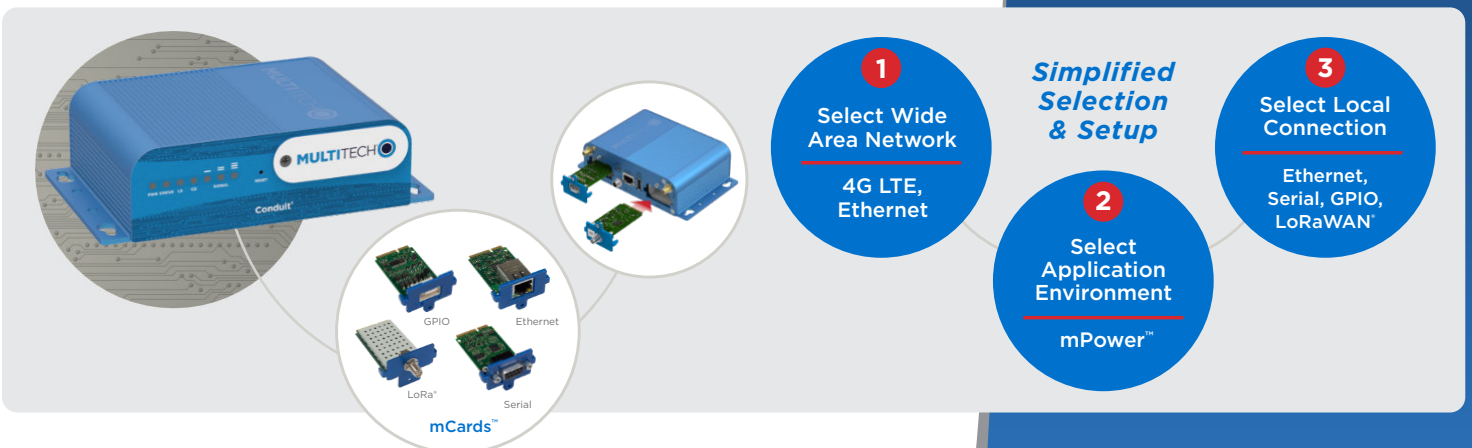
## MTCDT-L4G1 Models

**MultiTech Conduit®** is the industry's most configurable, manageable, and scalable cellular communications gateway for industrial IoT applications. Network engineers can remotely configure and optimize their Conduit performance through DeviceHQ®, the world's first IoT Application Store and Device Management platform. The Conduit features Wi-Fi/Bluetooth/Bluetooth Low Energy (BT/BLE), GNSS, and two accessory card slots that enable users to plug in MultiTech mCard™ accessory cards supporting their preferred wired or wireless interface to connect a wide range of assets locally to the gateway.

Available options include a LoRaWAN® mCard capable of supporting thousands of MultiTech mDot™ and xDot® long range RF modules connected to remote sensors or appliances. Quick-to-deploy and easy to customize and manage, the Conduit communications gateway realizes your IoT application.

### GATEWAY BENEFITS

- Global MNO and LoRaWAN® support
- Backhaul options include | Ethernet and optional 4G-LTE cellular for cost effective deployment
- GNSS module for LoRaWAN packet time-stamping and network based location
- Wi-Fi communication supporting 802.11 a/b/g/n 2.4 GHz and 5 GHz with WPA2 personal transmission security. Wi-Fi Access Point and Client modes are supported simultaneously.
- BT Classic and BLE 4.1 communication supports local connectivity with automatic pairing with target devices utilizing 128 bit link key length security.



# mPower™ EDGE INTELLIGENCE

## Programmable embedded software provides enhanced security and enables task execution at the edge for reduced latency and cost optimization.

mPower™ Edge Intelligence embedded software delivers programmability, network flexibility, enhanced security and manageability for scalable Industrial Internet of Things (IIoT) solutions.

mPower simplifies integration with a variety of popular upstream IoT platforms to streamline edge-to-cloud data management and analytics, while also providing the programmability and processing capability to execute critical tasks at the edge of the network to reduce latency; control network and cloud services costs, and ensure core functionality – even in instances when network connectivity may not be available.

mPower software specifications can be found **here**.

## LENS® Embedded Network Server & Key Management Toolset for LoRaWAN® Networks

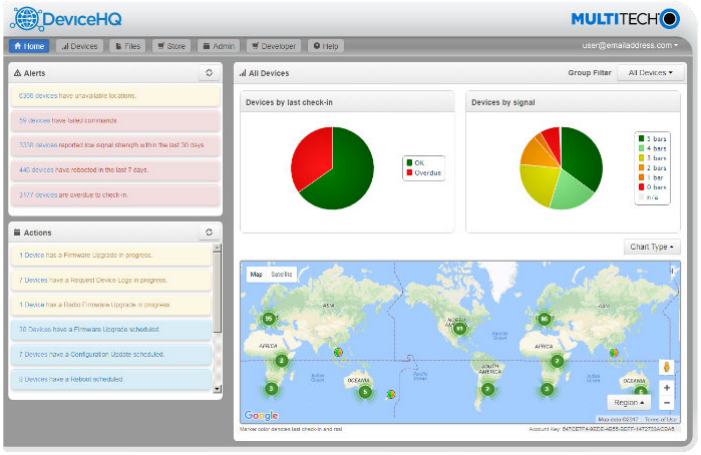
LENS is a hybrid LoRaWAN® network management platform that enables deployment and management of LoRaWAN networks at scale. Designed for private and enterprise networks, LENS provides a site-by-site user account and centralized management for LoRa® end devices, as well as configuration and control of Conduit® gateways. LENS has the capability to assign unique access rights to individual users, add gateways and LoRa end nodes in bulk, or create separate organizations and network segmentation to support different IoT use cases or applications.



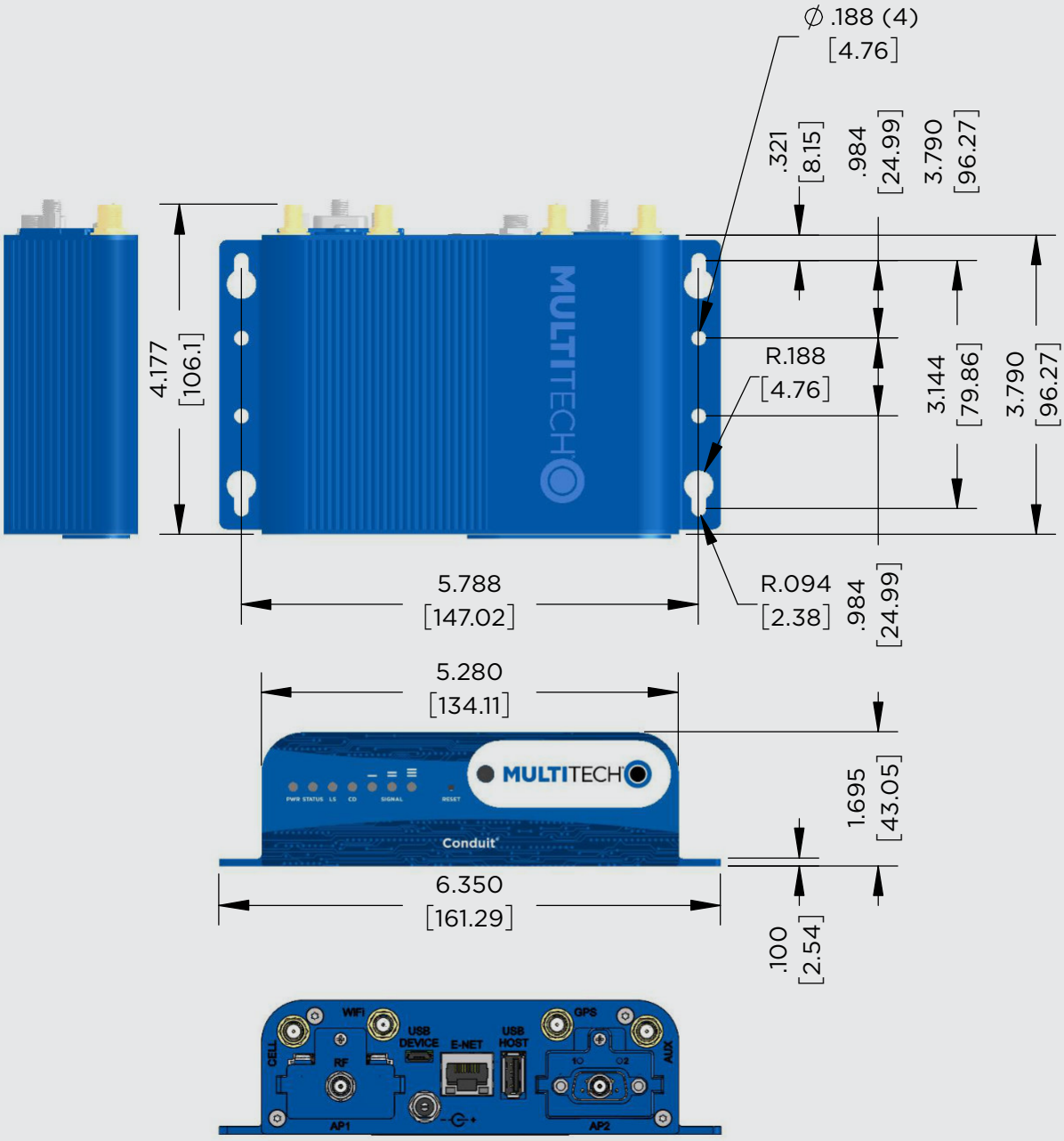

DeviceHQ®

## Cloud-based Application Store and IoT Device Management

MultiTech DeviceHQ® is cloud-based tool set for managing the latest generation of MultiTech devices. It incorporates all the functionality of MultiTech Device Manager, on which so many M2M and IoT applications already rely for remote monitoring, upgrades and configuration of entire device populations – whether one or 1 million. DeviceHQ takes remote device management and maintenance to a new level, by providing an application market-place, allowing users to browse applications or build their own and then easily deploy and customize them for remote devices located anywhere.



## MultiTech Conduit® Dimensional Drawing




Dimensions in Inches [mm]

## SPECIFICATIONS*

| Models | MTCDT-L4G1 Models | |
|---|---|---|
| Cellular Module | Quectel EG25-G | |
| Regions | Australia / Canada / European Union / Japan / Korea / United Kingdom / United States | |
| Cellular Module Performance**** | 3GPP Release 11 / 4G-LTE FDD/TDD Category 4<br>150 Mbps peak downlink / 50 Mbps peak uplink with 3G/2G fallback | |
| Frequency Band (MHz ) | **4G LTE FDD (Europe):**<br>B1(2100), B3(1800), B7(2600), B8(900), B20(800), B28(700)<br>**3G (Europe Fallback):**<br>B1(2100), B3(1800), B8(900)<br>**2G (Europe Fallback):**<br>B2(1900), B3(1800), B8(900)<br>**4G LTE FDD (AT&T):**<br>B2(1900), B4(AWS1700), B12(700)<br>**4G LTE FDD (Verizon):**<br>B4(AWS1700), B13(700)<br>**4G LTE FDD:**<br>B5(850), B18(800), B19(800), B25(1900), B26(850)<br>**4G LTE TDD:**<br>B38(2600), B39(1900), B40(2300), B41(2500) | |
| FirstNet Support | – | |
| Diversity/MIMO | Rx Diversity and MIMO DL 2x2 | |
| SMS | Mobile Originate, Mobile Terminated, Point-to-Point | |
| Processor & Memory | ARM9 processor with 32-Bit ARM & 16-Bit Thumb instruction sets<br>• 400 MHz • 16K Data Cache • 16K Instruction Cache • 128X16 MB DDR RAM<br>• 256 MB Flash Memory | |
| Wi-Fi / Bluetooth (-247 models) | Wi-Fi: 802.11abng (2.4 & 5 GHz) / Bluetooth: Classic 4.1 and BLE | |
| GNSS (-246 and -247 models) | GNSS for LoRa Packet Time Stamping<br>Concurrent GNSS connections: (3)<br>GNSS Systems Supported: (default: concurrent GPS/QZSS/SBAS and GLONASS) | |
| LEDs | PWR (Power), STATUS (Power Status), LS (Link Status), CD (Carrier Detect), SIGNAL (Signal Strength) | |
| LoRa Specifications (for models that include MTAC-003 or MTAC-LORA Gateway Accessory Card) | | |
| Gateway Accessory Card | **MTAC-003E00**<br>**MTAC-LORA-H-868** | **MTAC-003U00**<br>**MTAC-LORA-H-915** |
| LoRa Frequency Band | 868 MHz | 915 MHz |
| LoRa Channel Plan | EU868 (EU863 - 870) | US915 |
| Channel Capacity | 8-channels (half-duplex) | 8-channels (half-duplex) |
| LoRa Power Output | Maximum EIRP: 14 dBm - 27 dBm******* | 27 dBm maximum output power before antenna |
| LoRaWAN Standard | LoRaWAN 1.0.3 specifications | LoRaWAN 1.0.3 specifications |
| Connectors | | |
| Standard Connectors (all models) | **Power:** 9 - 32 VDC (2.5 mm miniature barrel jack (screw-on)<br>**E-NET:** RJ-45 Ethernet jack (10/100)<br>**USB DEVICE:** USB 2.0 Micro B<br>**USB HOST:** (1) USB 2.0 Type A<br>**AP1, AP2:** Slots for MTAC Accessory Cards (2)<br>**SIM** (under nameplate): mini SIM (2FF) 1.8 & 3V<br>**Micro SD Card** (under nameplate):<br>32 GB (HSMCI) max (industrial temperature range recommended)<br>**Debug Port** (under nameplate): micro USB or 3-pin connector<br>**RESET:** Push-button reset switch | |
| Antenna Connectors (-246 models) | Antenna: (3) SMA (cellular, auxiliary, GPS) | |
| Antenna Connectors (-247 models) | Antenna: (4) SMA (cellular, auxiliary, GPS, Wi-Fi) | |
| Additional Antenna Connectors (LoRaWAN models) | Antenna: (1) SMA (RF-LoRaWAN) | |
| Physical Description | | |
| Dimensions | 6.35″ x 4.23″ x 1.69″ (161.3 mm x 107.4 mm x 42.8 mm)<br>See mechanical drawing for dimensions | |
| Weight | 1.0 lbs (0.45 kg) with two accessory cards installed | |
| Chassis Type | Anodized aluminum (blue) | |
| Mounting Options | Desktop / Wall mount / DIN rail mount (using DIN-FLANGE Accessory) | |
| Power Requirements | | |
| Input Voltage | 9-32 VDC at 1.7A********<br>provided to 100 - 240 VAC 50/60 Hz external adaptor or fused DC Power Cable | |
| Power Draw @ 9 VDC***** | Sleep Mode: N/A / Idle: 700 mA / Max Power: 1250 mA (average) | |
| Environmental | | |
| Operating Temperature | -30° to +70° C*** | |
| Storage Temperature | -30° to +70° C*** | |
| Relative Humidity | 20 to 90% non-condensing | |
| Certifications | | |
| EMC / Radio Compliance | CE / FCC Part 15 Class B / IC Class B / KCC (Korea) / Radio Law (Japan) / RCM / UKCA | |
| Safety Compliance | UL/cUL/IEC 60950-1 | |
| Network Compliance | PTCRB | |
| Network Operator | AT&T, Verizon (Carrier approved MTSMC-L4G1-U) | |
| Warranty | 2-Years - www.multitech.com/legal/warranty | |

* See hardware guides for additional information.
** Some devices are shipped with MTAC gateway accessory card installed at factory. See ordering part number for details.
*** UL Listed @ 40° C, limited by AC power supply. UL Recognized @ 65° C for Conduit LTE devices when used with the fused DC power cable, part number FPC-532-DC.
**** Actual device performance may be affected by a variety of attributes such as cell tower distance, data loads, packet sizes, etc.
***** See Hardware Guide for additional power meaurements
****** All future end-user (OEM) devices will and must go through FirstNet certification prior to being included in the FirstNet device ecosystem
******* Maximum EIRP is 14 dBm for most of the band, except 27 dBm at 869.4 – 869.65
******** Optional power must be UL Listed ITE power supply marked LPS or Class 2 rated with rating between 9 -32 Vdc minimum of 1A .

## ORDERING INFORMATION

### Models Using the MTAC-003 LoRa Gateway Accessory Card

| Ordering Part Number | Description | Region |
|---|---|---|
| MTCDT-L4G1-246A-868.R3-WW | LTE Cat 4 Programmable Gateway, 8-channel, 868 MHz, GNSS with MTAC-003E00 mCard and Accessory Kit #1 | European Union<br>United Kingdom |
| MTCDT-L4G1-247A-868.R3-WW | LTE Cat 4 Programmable Gateway, 8-channel, 868 MHz, GNSS + Wi-Fi/BT, with MTAC-003E00 mCard and Accessory Kit #2 | European Union<br>United Kingdom |
| MTCDT-L4G1-246A-915.R3-WW | LTE Cat 4 Programmable Gateway, 8-channel, 915 MHz, GNSS with MTAC-003U00 mCard and Accessory Kit #1 | Australia / Canada<br>Japan / United States |
| MTCDT-L4G1-247A-915.R3-WW | LTE Cat 4 Programmable Gateway, 8-channel, 915 MHz, GNSS + Wi-Fi/BT, with MTAC-003U00 mCard and Accessory Kit #2 | Australia / Canada<br>Japan / United States |

### Models with GNSS and Wi-Fi/Bluetooth

| Ordering Part Number | Description | Region |
|---|---|---|
| MTCDT-L4G1-247A-WW | LTE Cat 4 Programmable Gateway with GNSS + Wi-Fi/BT and Accessory Kit #3 | Australia / Canada<br>European Union / Japan<br>United Kingdom<br>United States |

### Models with GNSS

| Ordering Part Number | Description | Region |
|---|---|---|
| MTCDT-L4G1-246A-WW | LTE Cat 4 Programmable Gateway with GNSS and Accessory Kit #4 | Australia / Canada<br>European Union / Japan<br>United Kingdom<br>United States |

## ACCESSORY KIT SPECIFICS

Accessory kits differ by model number.

| Accessory & Kit Number | 1 | 2 | 3 | 4 |
|---|---|---|---|---|
| Power Supply | (1) | (1) | (1) | (1) |
| Power Blade(s) | (4) AU, EU, GB, US | (4) AU, EU, GB, US | (4) AU, EU, GB, US | (4) AU, EU, GB, US |
| Cellular Antenna | (2) | (2) | (2) | (2) |
| Wi-Fi/BT Antenna | | (1) | (1) | |
| LoRa Antenna | (1) | (1) | | |
| Ethernet Cable | (1) | (1) | (1) | (1) |
| USB Cable | (1) | (1) | (1) | (1) |

## ACCESSORIES

### MultiTech Conduit® Gateway / Device Specific Accessories

| Model | Description | Region |
|---|---|---|
| ANGPS-1MM | Antenna Indoor Magnetic for GNSS | Global |
| AN868-915A-1HRA | 868-915 MHz RP-SMA Antenna, 8" (3.0 dBi) | Global |
| CA-MTAC-GPIO | GPIO Cable for MTAC-GPIO (2.5 feet) | Global |
| CA9-9-D | DE9M-DE9F Serial Cable (6 feet) | Global |
| CA-USB-A-MICRO-B-3 | USB Cable Type A to Type B Micro (3 feet) | Global |
| CA-MTCDT-DEBUG | USB to 3 Pin Debug Cable (for use with Linux host systems only) | Global |
| FPC-532-DC | DC Power Cable with Inline Fuse (5 feet) | Global |

### MultiTech mCard™ Gateway Accessory Cards (MTAC Series)

| Model | Description | Region |
|---|---|---|
| **MTAC-003x** | **Gateway Accessory Cards - LoRa** | |
| MTAC-003E00 | 868 MHz LoRa Accessory Card, Antenna Sold Separately | European Union<br>United Kingdom |
| MTAC-003U00 | 915 MHz LoRa Accessory Card, Antenna Sold Separately | Australia / Canada<br>Japan / United States |
| **MTAC-GPIO** | **Gateway Accessory Cards - GPIO** | |
| MTAC-GPIO | GPIO Accessory Card, GPIO Cable Sold Separately | Global |
| **MTAC-MFSER** | **Gateway Accessory Cards - Serial I/O** | |
| MTAC-MFSER-DTE | Multi-Function Serial Accessory Card - DTE Interface | Global |
| MTAC-MFSER-DCE | Multi-Function Serial Accessory Card - DCE Interface | Global |
| **MTAC-ETH** | **Gateway Accessory Card - Ethernet** | |
| MTAC-ETH | 10/100/1000 Mbps Ethernet Accessory Card, Ethernet Cable Sold Separately | Global |

Visit: **www.multitech.com** for detailed product model numbers.
For additional accessory information, visit: **www.multitech.com/all-products/accessories**

Produced in the U.S. of U.S. and non-U.S. components. Features and specifications are subject to change without notice.

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## Services & Warranty

MultiTech's comprehensive Support Services programs offer a full array of options to suit your specific needs. These services are aimed at protecting your investment, extending the life of your solution or product, and reducing total cost of ownership. Our seasoned technical experts, with an average tenure of more than 10 years, can walk you through smooth installations, troubleshoot issues and help you with configurations.

## Technical Support Services

At MultiTech, we're committed to providing you personalized attention and quality service while providing you a quick response to your product support needs. We have several options of support for you to choose from.

For additional information on Support Services as well as other service offerings, please contact your MultiTech representative or visit www.multitech.com/support.go

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MULTITECH®